

REMARKS

The Examiner is thanked for the courtesies extended during the interview of July 7, 2004, attended by the inventor and the undersigned counsel. It is submitted that the opportunity to demonstrate the invention in a DVD video of actual tests of the invention as claimed herein provided the needed clarification as to the uniqueness and patentability of the disclosed invention. A report from the Picatinny Arsenal is enclosed herewith and, as will be seen by the Examiner, the government report attests to the accuracy of the demonstrations shown in the video.

Claims 45, 46 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Davies. At Col. 2, line 61 – Col. 3, line 6, Davies is stating a recognized problem and, at Col. 3, lines 3-4, states the potential solution to the problem of using a suppressor. As covered in more detail further hereinafter with reference to the rejection of Claims 49, 50, 47, 51-54 and 56, unlike the instant invention, Davies does not have an actuator to maintain the pellets in a lethal mass for a predetermined distance. Rather once the Davies projectile passes through its target it immediately starts to spread out, with the goal being to reach a particle mass diameter of 24 inches within a three (3) foot range.

Claims 45, 46 and 48 stand rejected under 35 U.S.C. 102(b) as being anticipated by Canon. It is the Examiner's position that Canon discloses a projectile comprising a shell 10 containing a plurality of particles and a liquid, and a non-fragmenting tip 20. The Examiner has stated that the Canon projectile will, as taught at line 63 of col. 3 through line 4 of col. 4, substantially perform the method claimed in the instant invention.

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Attention is invited to Figures 2 and 3 wherein it is evident that the projectile of Canon cannot maintain the pluralities of particles as a unitary mass after impact. For sake of argument, it will be assumed that the element 20 is an actuator. It is, in these Figures, shown that the particles will disperse when released from the cartridge 10. The cartridge 10 is shown to deform and thus, it is evident that when the cartridge separates from the element 20, the particles will disperse rather than traveling behind the actuator as a unified mass. This is reinforced at Col. 4, lines 13 – 16 wherein it is stated that “[A]t the point of impact the edges of the cartridge 10 will separate from the tip, as shown in FIG. 3, and the particles 24 will be distributed widely within the body of the target.” Cannon is further noted to define the projectile as containing heavy particles that disperse upon impact. The invention as defined in the claims of the present invention, specifically define a method in which the particles do not disperse upon impact, but rather stay as a unified mass for a predetermined distance after impact.

Claims 51 and 52 stand rejected under 35 U.S.C. 102(b) as being anticipated by Peterson. It is the Examiner’s position that Peterson discloses in figs. 5C and 6C, a projectile comprising a shell 40 containing a plurality of particles 81 and that, as stated in lines 53-65 of col. 6, that the particles within the shell upon passing through and traveling a distance three feet past the target will disperse into a pattern. The Examiner concludes that the Peterson projectile will substantially perform the claimed method.

The language of Peterson, at Col 6, lines 63-66, is as follows:

“Furthermore, the shot will, upon passing through and traveling a distance three feet past the preselected target, disperse into a pattern which has a diameter of approximately 24 inches.”

This is not equivalent to the language of the instant claims as to reach the diameter of approximately 24 inches within three feet from penetration, the Peterson must immediately start to disperse. In the invention as defined in the pending claims, the actuator maintains the particles as a unified mass and after a predetermined distance, as for example three feet, the particles then begin to disperse and subsequently become a non-lethal mass. For the initial three feet from impact, the particles are not dispersing as they do in Peterson but rather during the initial travel zone after impact the particles are maintained as a cohesive lethal mass. Subsequent to the initial travel zone, the particles disperse into individual non-lethal particles. Physics dictate that there must be a progressive spreading in Peterson, from the particles being in a mass immediately after the initial impact to having a two foot diameter over a three foot range. Taking into consideration the speed at which the particles are traveling, a change from the diameter of a bullet to a two foot diameter over the distance of three feet would be a fraction of a second. In the invention as claimed, the particles do not begin to disperse until the particles have traveled as a cohesive mass for a distance of at least two feet to about ten feet (claim 51).

Claims 49, 50, 47, 51-54 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davies. It is the Examiner's position that it would have been obvious to one having ordinary skill in the art at the time that the invention was made to vary the characteristics of the elements of the Davies projectile to achieve a desired dispersion of the particles. Attention is invited to Col. 13, lines 53-61, wherein it is disclosed that the element that is illustrated in Fig 7 is fused to form a unitary hull as illustrated in Figure 8C. The essential language in Davies states:

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"FIG. 8C is a simplified side view, in section, taken along section lines VIII--VIII of FIG. 7, of a completed frangible payload 96. Ends of the petals 86 and the low density polyethylene end cap 94 have been fused using heat to provide a compact and rigid payload 96 that disintegrates following firing from a shotgun and impact. As a result, the payload provides great potential lethality prior to impact and relatively quick dissipation of the payload 96 following impact." (emphasis added/)

Therefore, there is no actuator element in Davies, let alone one that is releasable from the hull upon initial impact.

Claims 39-44, and 60-63 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Davies in view of Peddle. Davies has been applied as above. The Examiner notes that Davies does not disclose an absorption zone and looks to Peddle for a teaching that it is old and well known in the art to employ a wad absorption zone in a shotgun projectile to protect the projectile upon firing. To employ an absorption zone in the Davies projectile would still not meet the terms of the instant claims due to the inherent structural and performance differences between Davies and the instant invention.

Claims 49, 50, 47, 51-54, 56, 57 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Canon, the Examiner stating that it would have been obvious to one having ordinary skill in the art at the time that the invention was made to vary the characteristics of the elements of the Canon projectile to achieve a desired dispersion of particles.

The Canon projectile disintegrates immediately upon impact within the target body and does not teach, as does the instant invention, passing through a barrier, or initial target, and continuing to having a lethality range for a predetermined distance beyond that initial impact. As stated at Col 4, lines 6 - 16 in Canon, the liquid and particles contained within the projectile will

be distributed within the target body upon impact. The tip, however, will not necessarily be stopped by the target, especially when lead is used. (Col. 3, lines 55 - Col 4, lines 1- 5)

In the instant application, the projectile can pass through an initial barrier and still remain lethal for a predetermined distance. It is only in a viscous environment that the instant projectile will immediately lose its momentum, at which point the entire projectile is stopped, including the actuator. The Canon patent has no teaching regarding the projectile impacting an initial target or barrier and then maintaining lethality for a predetermined distance beyond this initial impact. Additionally, the Canon patent teaches the use of a projectile having variable sections, one of which includes a heavy liquid to semi-solid gelatinous filler. (Col 5, lines 3-5)

In the pending claims, the hull peels back during impact with an initial barrier, or target, leaving the particles and actuator to proceed as a unitary mass for a controlled predetermined distance. The use of a gel, or heavy liquid, would immediately negate this ability. Since the Canon patent teaches the use of the gel or heavy liquid, there would be no motivation or ability to modify the Canon projectile to provide the benefits of the pending projectile.

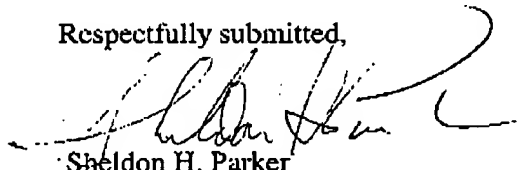
Claims 39-44 and 60-63 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Canon in view of either Turco et al. or Knostrer, Jr. Applicant's remarks relating to Canon as noted above are applicable to the rejection of claims 39-44 and 60-63. The Examiner notes that Canon does not disclose a projectile comprising a gas seal and a wad absorption zone. It is submitted that as Canon was certainly aware of the use of gas seals and a wad absorption zones in projectiles and if the addition of same would have enhanced the Canon projectile it would have most likely been included in the Canon projectile. Whatever the reason for the omission of those elements in the Canon projectile, the addition of the elements to the Canon would still not

produce the projectile of the instant invention. As noted above in regard to Canon the differences are far greater than addition of a gas seal and wad adsorption zone. Adding a standard feature to projectile fundamentally unlike that of the instant invention will not produce the instant invention.

Claims 53-55 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson. The remarks made above in regard to Peterson are herein applicable.

In view of the foregoing it is respectfully submitted that the application is in condition for allowance and an early Notice of Allowance is hereby respectfully requested.

Respectfully submitted,



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